

## CLAIMS

1. A method of engrafting foreign replacement cells within a fetal non-human mammal, comprising the steps of:
  - (a) selectively destroying native cells in a tissue of a fetal non-human mammal host, wherein the number of maternal cells of the same tissue is not substantially reduced; and
  - (b) implanting foreign replacement cells in the tissue of the fetal non-human mammal host, whereby the foreign replacement cells replace destroyed cells of the tissue.
2. The method of claim 1 wherein the cells of the tissue express a corresponding suicide gene product.
3. The method of claim 2 wherein the suicide gene is selected from the group consisting of thymidine kinase, mutated thymidine kinase, cytosine deaminase, carboxylesterase, carboxypeptidase, deoxycytidine kinase, guanosine-xanthin phosphoribosyl transferase, nitroreductase, purine nucleoside phosphorylase, and thymidine phosphorylase.
4. The method of claim 1 wherein the tissue is selected from the group consisting of liver, endothelium, hematopoietic cells, neural cells, epithelium, retinal pigment epithelium, myocardium, skeletal muscle, smooth muscle, progenitor cells, stem cells, lung, intestine, kidney, endocrine tissue, cartilage, and bone.
5. The method of claim 1 wherein the fetal non-human mammal is selected from the group consisting of a primate, an artiodactyls, a rodent, a carnivore, and a lagomorph.
6. The method of claim 1 wherein the foreign replacement cells are derived from the same species as the fetal non-human mammal host.

7. The method of claim 1 wherein the foreign replacement cells are derived from a different species than the fetal non-human mammal host.
8. The method of claim 1 wherein the foreign replacement cells are human cells.
9. The method of claim 1 wherein the native cells are destroyed using an immunoliposome.
10. The method of claim 1 wherein the native cells are destroyed using a liposome comprising a toxin or a prodrug.
11. The method of claim 10 wherein the liposome comprises a tissue-specific targeting ligand.
12. The method of claim 11 wherein the tissue-specific targeting ligand is an antibody.